

(1) calculating an inductance based on the determined number of spiral conductive patterns, the selected spiral shape, and the defined spatial characteristics; and

(2) repeating steps (a), (b), and (c) when the calculated inductance is not substantially equal to a target inductance.

17. The method of claim 16, wherein step (1) comprises calculating the inductance according to:

$$L = \frac{37.5\mu_0 n^2 a^2}{(22r - 14a)}, \text{ wherein}$$

$L$  is the inductance in Henries,

$n$  is a total number of turns in the plurality of spiral conductive patterns,

$\mu_0$  is the permeability of free space,

$r$  is an outer radius for each of the spiral conductive patterns in meters, and

$a$  is the mean radius for each of the spiral conductive patterns in meters.

18. The method of claim 13, wherein step (d) further comprises:

(3) simulating a circuit application of the multiple layer spiral inductor having the determined number of spiral conductive patterns, the selected spiral shape, and the defined spatial characteristics.

19. A diplexer filter for use in a communications device, comprising:  
one or more multiple layer inductors implemented on a substrate having a plurality of surfaces;

wherein each of the one or more multiple layer inductors includes:

a first spiral conductive pattern disposed on a first of the plurality of surfaces;

a second spiral conductive pattern disposed on a second of the plurality of surfaces;

a continuing interconnection coupled to said first and second spiral conductive patterns;

an interface coupled to said first and second spiral conductive patterns;  
and

a first conductive shield pattern disposed on a third of the plurality of surfaces, said third surface adjacent to said second surface.

20. The diplexer filter of claim 19, wherein said communications device includes a television tuner.

21. The diplexer filter of claim 19, wherein said communications device is a cable modem.